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THE macdonald JOURNAL

JULY 1977



SPECIAL: EVENING COURSE PROGRAM '77-78

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Photo: the late R. R. Sallows, Goderich



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serving Agriculture

THE macdonald Journal

JULY 1977

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Journal Jottings

The loud, proud crowing of a prize-winning leghorn rooster drew friends and me into the poultry building at the recent Ormstown Fair. He was, indeed, a fine fellow, but my eye was caught by a couple of strangely-coloured birds belonging to that man of many talents, H. Gordon Green. When I teased Gordon about these fancy ladies, his reply was, "Hazel, I've been trying to tell you for years that although you can't make a living out of farming, it doesn't mean you can't have fun doing it."

Fortunately, in spite of Gordon's usual sage sayings, many farmers today are making a living from farming. Possibly not enough, but what struck me — was the "having fun doing it." Has the fun gone out of farming for most full-time farmers who, in order to stay in business, have had to increase in size with

more hours spent on the land, in the barn, and in the office and less in the enjoyment and satisfaction of the independence of man and his land that could be called "the fun of doing it." Our Guest Editorial, which ties in with our special section on Evening Courses, is, I think, an extension of what Gordon so succinctly said, half in jest. The sentiments expressed by Dr. Peterson are similar, I feel, to those of many who are putting aside a few hours each week to take a course or two in order that they, too, may not only realize the fun of farming but, also, and more important, some of the fun and satisfaction that our short span of life should offer.

I wonder if it is this sense of satisfaction and, despite the hard work — and few could work harder than these good women — the sense of fun that makes the Annual Convention of the QWI so special for me. I think it is.

Their hours are long as they delve into past endeavours and future goals. They work hard at meetings, but there is time to visit, to enjoy, to have fun.

It has been hard work but fun putting this special issue together: among other things, working with WI, visiting a goat farm, photographing horses, talking sheep, collaborating with Doris Davison, who is in charge of the evening courses, both in the office and over a working weekend at her summer home. In a sense it is her issue, but there is something of interest, I believe, for all our readers.

Thanks, Gordon, for reminding me about having fun. If one feels that the fun has gone out of what one is doing, then perhaps it's time to reflect and ask oneself, "can I put the fun back into what I'm doing or should I seek it elsewhere?"

Hazel M. Clarke

Guest Editorial

Some time ago, a philosopher-politician, Thomas Jefferson, wrote "the agrarian class is the first in utility, and ought to be the first in respect." He further urged intelligent young men to study agriculture, so that they could "replenish and invigorate a calling, now languishing under contempt and repression."

Unfortunately, despite Mr. Jefferson's opinion, for many years farmers never got much respect. Until fairly recently, it was fashionable for educators and sociologists to make references to "the rural underprivileged," and their remarks were, usually, not very flattering. Similarly cartoonists depicted the farmer as a semi-literate hick, garbed in bib overalls and a straw hat, and presenting ample opportunities for a nattily attired city salesman, probably selling lightning rods or seeds for a marvelous new type of hulless oats.

By now, however, times have changed (and the educators are having to explain why little, young Johnny can't read or do arithmetic). The hick farmer, who didn't know how to do anything else, has gone to work in city factories, or elsewhere. Today's remaining successful farmers are, or should be, regarded as good businessmen, who have considerably less control over their inputs and outputs than those in other types of business, and who have to possess a wide range of skills — from helping a cow with her first calf to welding a broken implement hitch — and who net a lower return on their investment than other businessmen.

Society has also become more complex for the non-farmers, and many non-farmers have occa-

sion to wonder whether they are simply working for some system or monstrous machine, or whether it is working for them. A whole new "back-to-the-land" movement has arisen, made up of people who want to leave "the system" behind, after a working day, and return to a place in the country, which may offer a better place for raising a family, the chance to enjoy really fresh garden vegetables, or even a tax shelter, as well as a good place to simply relax and escape the pressures of the day.

As a professor here, I am luckier than most, because I get a certain amount of satisfaction from my work. However, I spend my annual holiday putting up hay on a small farm, which, by sheer necessity, must contribute to its own taxes. One of my hay customers once asked me if this was actually a profitable venture, and I replied that it certainly was not, but that I did not yet know what my hourly loss for the year was. He then asked why I bothered to harvest hay (and heave the bales into his barn) at all, and I was unable to give him a good answer.

Unfortunately for all of us, Hazel Clarke recently asked me the same thing, and invited me to explain the satisfaction I derive from my annual holidays of farming. There are at least two great "secrets" involved in the satisfaction of farming. We are all governed by the weather and the forces of nature, and a certain satisfaction can be had from successfully harvesting a crop in harmony with Nature — or despite its adverse effects. A good farmer never has to worry about whether or not he is a part

of some system, for he already knows that he is, and he knows that the rain that interferes with haying is good for the oats or the vegetable garden. The second "secret" is that today's farmers have learned, probably better than anyone else, how to make use of machinery — rather than be used by it.

For those readers who are contemplating buying a "place in the country" I would highly recommend the extension courses taught here at Macdonald College. They cover a wide range of subjects from beekeeping to welding. For those of you who are successful full-time farmers, I would say check the list to see if there is a class dealing with something you have considered but have not as yet tried — and congratulations on being members of "one of the most important, worthy, satisfactory, and dignified" (Bromfield) professions the world has to offer.

Professor Jean Peterson,
Department of Plant Science.

The subject was SHEEP

A few weeks before spring was officially here I spent a pleasant couple of hours discussing sheep with three College staff members and a guest, who is certainly no stranger either to many here at Macdonald or to those of our readers who have been following the Quebec fairs for the last 40 or more years.

Professor Roger Buckland is in the poultry section of the Department of Animal Science. He keeps about 10 ewes as a hobby, selling his lambs in the fall. His wife uses the wool from the flock, spins, cards, and dyes it before knitting it up for family and friends. Lynn Forgrave, Director of Farm Practices in the Diploma Program, grew up with sheep on the family farm in the Eastern Townships. Henry Garino's thesis for his masters was on sheep and for two years he worked with the sheep herd here at the College. He is now in the Department of Animal Science. A shepherd since the age of 16, Billy Merchant came from Scotland in 1928. Later Mr. Merchant became a farm manager on several farms in the Townships but never lost his interest in sheep. Now in his 84th year, he lives in Kirkland near the College and still has some 50 sheep, a few Aberdeen Angus, geese, and three or four breeds of fancy feathered fowl.

It was a good cross section of young ideas and old knowledge. All were interested in the growth of the sheep industry in this province but somewhat pessimistic about its future as a commercial venture, not because they didn't see a need but rather because of a variety of problems. They were optimistic about sheep for part-time or hobby farmers, however, and also for those who might combine it with another farming

enterprise. Their comments follow:

Hazel M. Clarke

Why so few sheep?

Billy Merchant: There are only a few big sheep farmers in this part of the world. Some farmers may keep three or four for their own use but there really is no great interest in sheep and one reason is fear of disease. Scrapie, in particular, which I personally don't think is that great a problem.

Henry Garino: We have lost two herds at Macdonald because of it. Much more research is needed on this disease because it is very transmissible.

Roger Buckland: The reputation of internal parasites perhaps scares people off. Not that they are difficult to deal with but the reputation that sheep always get worms, that you have to cycle your pasture detracts from people getting into sheep.

Lynn Forgrave: We do have medications to control these things very easily but there still is a negative philosophy.

Roger Buckland: We have a predator problem, particularly in areas with poor land. In other areas the better land is being used for animal and plant agriculture that supposedly would give a higher return per acre. A second point is that although some sheep are killed in Montreal, we don't have a specialized killing plant.

Lynn Forgrave: Is it economical any more to produce sheep as an only animal product off the farm? Have land values, predator

problems, and high interest rates put us out of the sheep business?

Henry Garino: One very strong reason why more people are not into sheep is that the marketing is not well regulated or well-known. But these problems aside — and to be a little more optimistic — if we look at the priorities of the Quebec Ministry of Agriculture in developing areas like Lac St-Jean, Abitibi, and the Gaspé where real estate values are not so steep and where there is not that much urban pressure, to me, at least, these are the areas that would be well suited to big sheep flocks.

Roger Buckland: Provided we can control predators. Also we should not give the impression that sheep are going to make something out of nothing on poor land because they won't.

Billy Merchant: It is also a mistake to put sheep on to wet land; it should be good, dry land.

Roger Buckland: My sheep are on some wet land but so far I have had no trouble with foot rot because I keep the hooves well trimmed.

The predator problem

Lynn Forgrave: There are many programs to prevent or reduce predator problems, but the solution that seems to work best is where you fence a small area that the sheep spend the night in. This can be done in Quebec because our sheep are not on the range. Programs like baiting are fine except that you bait everyone's dog and everything else. They don't work well in practice. Most sheepmen have given up on the trapping program because you may get one animal

one night and then they won't come near again. Try another routine and the same thing happens.

Henry Garino: One sheepman I spoke to said that the problem in his area was coyotes. Chemicals do not work with coyotes because they don't eat dead meat — they kill fresh. He also mentioned that they are getting very aware of man and machinery and are not afraid. They will go into a field while grain is being cut, but as soon as the motor stops they are off. Dogs are also a problem.

Markets

Lynn Forgrave: We are limited to two basic markets: The Easter market and the fall market. The best managed lambs will probably make the Easter market because the sheep have been bred early and the lambs are ready for market in April. Other people who have less time to put into the flock will probably breed their sheep later in the fall, have lambs later in the spring and thus sell in the fall.

Billy Merchant: I have a neighbour who has about 60 grade ewes and by the end of April his lambs are all sold, and he's the only man I know who is making any money from lambs. He is selling at 30 to 40 pounds in weight and getting \$60 to \$70.

Lynn Forgrave: He is getting more for those lambs than he would in the fall at twice the weight.

Henry Garino: There is such a wide range of prices for the same type of product. For instance, a light lamb of about 60 pounds will go for about 75 cents at the local market whereas in Toronto they are offering \$1. It is a very unstable marketing structure.

Roger Buckland: There is also an unstable supply, particularly in Montreal. Is there a better way to market fall lambs? People are buying more things in bulk. Some families may not want to buy a side of beef because of the

size, but they want to buy a whole lamb. Perhaps we should be selling whole lambs for the freezer market. Again, as with the sale that Billy mentioned, these are private markets. We cannot go into this in a big way unless we have a big killing plant and a supply to support it.

Sheep and ...

Lynn Forgrave: I think that sheep and beef, for instance, are competitive. They both need cheap pasture, cheap land, and so on. One man who has both has found sheep to be quite profitable right now and therefore he is reducing his cow herd.

Henry Garino: Ewes have usually lambed before calving starts so



Top: Billy Merchant receiving one of the 14 ribbons he won at last year's Brome Fair from Mrs. Jane Gilday while Mr. H. McDonald keeps the records. This Leicester took the Breed Championship. Below: Judging a shearling class.

I don't think they would compete as far as labour is concerned.

Roger Buckland: I am also wondering if our earlier comments are not a little unfair in our returns per acre that can be achieved with sheep properly managed.

Henry Garino: It is a well-known fact that sheep are efficient users of pasture, much more so than beef, and they have the added advantage that they will finish

very nicely on pasture whereas beef cattle don't — they need additional feed.

Billy Merchant: If you put a few ewes and lambs in with a few cows you will find they get along a lot better than by themselves. Sheep will eat what the cows won't. Another good thing about running sheep and cattle together is that if you have cows and calves you are not bothered with any dogs going in among the sheep.

Roger Buckland: This would be good for the hobby farmer but, I think, commercially there would be problems.

Henry Garino: A small, mixed enterprise of this sort will give a farmer a more flexible market in the sense that the lambs are marketed in the spring, the calves in the fall. If you market everything at once and it is a good year, fine, but you will hit bad years and this way you could even out your chances a little.

Roger Buckland: I think sheep might be a better combination on a cash crop operation where you might be able to make use of land where you cannot profitably grow crops. The peak labour comes in the spring with lambing and this is before you can get on the land. Your summer is free. Under these conditions an intensive fall lambing operation might be good.

Billy Merchant: The neighbour I mentioned earlier grows 30 acres of corn and some asparagus for his roadside market. When the corn is off the fields, the sheep are turned on to them and they come in in great shape. There is something else that we are up against. We can't get good rams from abroad. I had someone come from the farthest end of Ontario for a Border Cheviot ram because he couldn't find one anywhere else. Let's get together and import some rams. Even if they have to keep them in quarantine, eventually you will have new blood in your flock. Using the same bloodlines all the time means that the sheep are getting smaller.

Lynn Forgrave: We definitely have a very small genetic pool, and we do get a fair amount of inbreeding. We need more people going back to the farm with part-time jobs. They could keep sheep as a hobby and it would give us an opportunity to increase our numbers of sheep.

Roger Buckland: I may be biased but I think they are a very good animal for the hobby farmer.

What breeds for hobby farmers?

Lynn Forgrave: It depends. For the early market you want a lamb that is going to be very meaty, grow relatively fast to at least 30 to 50 pounds. If you are looking at the fall market, then you may be hoping for more lambs, lambs that finish at a heavier weight, you may want a crossbred lamb, part Suffolk. The earlier lamb would probably be a Hampshire.

Billy Merchant: I have three breeds. Leicesters, Border Cheviots, and South Downs. I have lambs right now (late February) and if I want to put them on a special feed, I would have lambs in a month that I could sell but I never do that. I leave them with the ewes all summer and then sell them in the fall. It may not be the most economical way, but that is how I do it. I can't see a ewe doing nothing all summer!

Roger Buckland: Unless you were breeding her again. If the small producer decides that he wants to have purebred stock, then he should look at a breed that is fairly popular in his area so that he can obtain rams without a lot of trouble. I have Corridales. There's only one or two flocks registered in Quebec, and I have trouble obtaining rams. This is the biggest thing for a small producer to consider.

Lynn Forgrave: Can you have purebred sheep in a commercial operation? What about showing?

Billy Merchant: I like showing, so I wouldn't like to comment. This is where the hobby part comes in. If I didn't show, I could sell lambs at the right time.

Roger Buckland: I think what Billy said is 100 per cent correct. If a person has a small flock and wants to show, fine. It depends on what you want to do.

Lynn Forgrave: Certain aspects of showing are probably not good, but if I wanted to buy a ram lamb I would have to go to an exhibition to meet the breeders

who have my breed of sheep. Also for comparison — one needs to see several sheep together while selecting the most desirable one for your ewes.

Roger Buckland: Wouldn't you go to the Ontario and Quebec tests now being conducted, granted in a small way, which I think are more of a step in the right direction? I agree a problem of showing is that we are selecting for show characteristics, but we have been talking about the narrow genetic basis of the Canadian sheep industry, and one thing that purebred showing does is maintain our breeds. We still have some genetic differences between breeds and if we did not have this great interest in showing there would be many more mixtures. So we still can go into crossing programs.

Someone starting out should consider mothering ability as high as any other trait because of the discouraging results that can be had if you have a lot of difficulties in lambing; ewes that don't accept their lambs, and you don't know that they are starving to death.

Lynn Forgrave: One of the problems with the trials you mentioned is that they are based mainly on rate of gain, and there are many other factors to consider.

Henry Garino: People getting into sheep production should know that some breeds are quite calm and easy to handle. Here at the College, for instance, we kept Suffolks and North Country Cheviots and there was a world of difference between working with the Suffolk and working with the North Country Cheviot, which is a very high strung, nervous animal. It is very difficult to control and very hard on fences. Hampshires are quite easy to handle and easy on fences.

Billy Merchant: I have worked with most breeds of sheep and I feel that the Hampshire ewe is the best all round ewe in the

whole business, and they don't need too much attention. They are healthy, the ewes lamb early and are good milkers. You can run them straight or as a cross. If I were going to breed market lambs, I would use a South Down ram with Hampshire ewes. You can't beat them. Another good, hardy sheep is a Border Cheviot. I get good results with a cross between them and a South Down. I do not recommend South Downs for beginners — for one reason they are very poor mothers.

Roger Buckland: Another thing that holds back sheep is the reproductive aspects; in other words, it is very labour intensive and requires a special kind of labour if you are going into early weaning, setting up nipple bars and so on. To meet the realism of nearly two lamb crops a year (1.8 is the figure) you have to be very intensive. To get your lambing done in a very short period of time, you have to wean, you have to get your ewes cycling and you have to have some Dorset in them. To be able to get them to breed twice a year without a lot of hassles would be a bigger breakthrough than getting three or four lambs at once.

Lynn Forgrave: Artificial insemination would probably be required in this type of program because of the inactivity of the ram as well as the ewe during certain seasons.

Roger Buckland: We have tremendous breed differences now in the active seasons for rams but I don't know of any breed of sheep that will breed when they are nursing.

Lynn Forgrave: This is one of the reasons for a fair amount of research into the early weaning of lambs simply to try to get them to breed back. If the ewe was approached in a hormonal sense, ovulation might be induced and pregnancy occur during the milking season. This would mean that she could still feed her own lamb, which I think is important.

Billy Merchant: You mentioned multiple lambing. I don't like the Finnish sheep that have four or five lambs at a time. To me that is useless because it takes a good ewe to raise two good lambs. I have always found that if I wanted a good market lamb, I had to have a single lamb.

Roger Buckland: I am wondering if it wouldn't be of interest to bring in some of the dairy breeds of sheep to improve milk production. The problem is that the costs are so great that with our limited sheep industry it is almost formidable to bring these animals in and expect to get money back.

Lynn Forgrave: The consensus at a recent meeting on sheep in Quebec was that one quarter Finn in the sheep flock was beneficial because it decreased the number of singles and increased the number of twins, with possibly a few triplets, but you don't get the regular three or four lambs that you would with a higher percentage of Finn. That much Finn seemed to be optimal in that it increased the number of lambs and the ewe could still feed them. They were talking about different types of crosses — Dorset and Suffolk were two primary ones. Dorset primarily because of the milk, Suffolk because of the meat quality. The Suffolk being the final cross.

Roger Buckland: I have heard about the tremendous breeding season of the hairless sheep in the hot climates. It seems that they are essentially non-seasonal breeders. A cross with some of our hair sheep might be good. In Cuba, they have imported some Corridales and other breeds to improve the wool yield on their native sheep. I don't know if these sheep will breed while they are nursing.

Lynn Forgrave: That seems like a more logical answer than weaning the lamb. One thing is just to gestate the lamb, the other is to at least feed it.

Roger Buckland: Early weaning is not justified unless there is a great deal of improvement in reproductive qualities.

Henry Garino: Or a substantial decrease in the price of milk replacer. When we had sheep here we weaned some right away and put them on a milk replacer and some we kept with the ewes. As far as I was concerned, the artificially reared lambs gained better. The others were with their mother and got a little grain.

Lynn Forgrave: I question creep feeding. Surely we can select a ewe that will feed her own lamb.

Roger Buckland: I want to breed my ewes when they are eight months old in the fall: creep feeding ensures that when the grass does come I know the lamb is going to be able to make maximum use of it.

Billy Merchant: One thing I have never done and will never do is breed ewe lambs the first year. It doesn't matter how good they are, I think they should always have the first year free. You have a better, stronger ewe and she will last longer.

Roger Buckland: Studies that I have seen indicate that the total reproductive performance of ewes is improved. I have one ewe who had a single and then the next two years twins. That was five ewes by the time she was three. It is a debatable point.

Sheep courses

Henry Garino: We are getting more and more students coming in that are interested in sheep production. Traditionally we have taught a course in beef production and we have included a few lectures on sheep, if there was some interest. Now we plan to devote a full two weeks of teaching sheep production at the end of the beef production course. And, again, because of growing interest we are offering a new evening course on sheep.

Macdonald Reports

by Joan Habel

HORSE MANAGEMENT COURSE — A PERENNIAL FAVOURITE

Pam Dillingham has taught the "Horse Management" evening course at Mac since 1970. Her course is always well attended, and hobby horsemen who study with her learn many aspects of horse management — history, breeds, feeding, grooming, first aid, health, stable care, riding, dressage, buying, training, breeding — both in the classroom and in the stable at Kilowen Farm.

A neighbour of Macdonald College Farm, Kilowen is Mrs. Dillingham's home and place of work combined. A visit to this lovely farm, with its old rambling house, well kept barns and spring pastures, was a pleasure. During our conversation, some interesting information emerged about the horse management course, horses, and horse lovers.

"Horse Management" attracts a variety of people, the couple who intend to retire to the country with one horse, the older teenager who likes horses but has had little opportunity to learn about them, or the parents of horse-happy kids who want to understand their offsprings' interests. Mrs. Dillingham starts with a basic outline for 10 classes, but tailors it to fit the special interests of her students, sometimes substituting another subject for one in which little interest is shown. The course is designed to help people with their own horses, at the hobby level.

Most students who already own horses have a stable. Boarding a horse is expensive — \$125 a month for facilities with an indoor arena, \$100 a month without indoor riding are average costs. Because there is no rating system for stables, horse owners are



Two shots of Pam Dillingham and friends — top, with a few of the 31 horses on the farm, below, having a chat with Amos, a 29-year-old pony.

advised to choose a boarding stable carefully. (The veterinarians and SPCA's in Quebec are at present drawing up a bill of acceptability for evaluating stables. Working with them is a new association of horse owners, La Fédération Equestre du Québec.)

People who are looking for a family horse should go to a dealer with a good reputation or take along a knowledgeable friend. The horse should not be too young and the expected cost would be between \$500 and \$1,000. Horses from PMU (pregnant mare urine) farms can be reliable horses, too, if the farmer has high standards

of care and the stallion used for breeding is of high quality. In any case, a horse should be examined by a veterinarian and declared healthy before it is bought.

Hand in hand with the steady interest in horses is the upsurge in the popularity of ponies. Why? They are safer for young children (a shorter distance to fall!), they are hardier, can live outside, are cheaper to buy, and eat less. In almost every horse show there is now a pony division in each kind of event; pony clubs, which began 30 years ago, are all across Canada. These clubs are organ-

ized and run by volunteers, who teach children to look after and train their ponies and to compete in the various events which can be up to international level. A very interesting competition, the tetrathlon, which combines swimming, track, shooting and riding, is especially attractive to boys. Children can join pony clubs at age seven or eight, or older, for an inexpensive membership of \$12 a year.

Perhaps the message conveyed most sincerely at Kilowen is the importance of proper care and regard for horses. They are not very hardy animals — to Pam Dillingham, ignorance is cruelty where horses are concerned and she is keen to spread the knowledge of good care and training. Not for the slacker, the lazy, the less than enthusiastic, this hobby. A person must be willing to be on call almost 24 hours a day, must be content with the hard work and learning involved to have the maximum return of pleasure and satisfaction from owning a horse.

DAIRY-BEEF DEMONSTRATIONS

The beef industry is a very small part of the Quebec agricultural picture, providing only about 20 per cent of the beef we eat; most of what we buy in stores and restaurants is imported from the West.

Since we are largely a dairy province, one may wonder why we don't have a viable dairy-beef industry here, as they do in other parts of the world, such as Europe. (The term "dairy-beef" here denotes beef derived from dairy breeds, **not** cull dairy cows and bulls but relatively young (1½ - 2 years) steers fed primarily to produce high quality beef). In Quebec, about 80 per cent of the bull calves born on dairy farms are sold at local auctions as veal calves and a large proportion find their way to the U.S.A. to be slaughtered and used for processed

meat. Some are destroyed at birth, and a few are kept for breeding stock. Perhaps new types of agricultural enterprises could be developed in which male calves of dairy breeds could be bought and raised economically to beef market weights — a team of scientists at Macdonald College are trying to show that this is possible.

Financed by a grant from the Quebec government and under the direction of Dr. Eugene Donefer of the Animal Science Department, a demonstration is underway to show farmers, meat packers, retailers, and consumers that high quality beef can be produced profitably in Quebec as a by-product of the dairy industry. At the present time, though, the Holstein beef business is not a paying proposition and, to help make it into one, the Macdonald research team is concentrating on factors such as: 1. the identification of genetically superior Holstein sires with potential for quality beef production, 2. most economical housing and feeding systems, and 3. acceptance of dairy-beef by packer and consumer.

Genetically superior sires

Dr. Brian Kennedy is collaborating with the Quebec artificial insemination unit at St. Hyacinthe to locate and buy, from D.H.A.S. herds, one-week-old Holstein calves which have several selected sires in common. A series of feeding trials are being run to identify which of the Holstein bulls are genetically superior for beef as well as for dairy production.

Housing and feeding

The feeding and management program has been divided into two stages: pre-weaning and post-weaning to slaughter. In the first stage, one of the major problems is the survival rate of calves, and Dr. Luis Latrille is studying the effectiveness of individual calf rearing systems. He has fed different amounts of milk replacers versus whole milk and will test various plant and animal protein

sources. The purpose is to develop an economical system of calf raising, since these calves will not bring the premium price associated with veal production.

In the second stage, post-weaning to slaughter, year-round housing systems will be compared. Low cost housing in an older barn set-up and a minimum cost environment on an outdoor lot providing little protection are being examined. Corn silage has been the main ration ingredient; legume haylage as a major protein source is being studied in order to make maximum use of home-grown feeds. Growth rates and feed efficiency are measured on animals being raised to different slaughter weights. The question raised is the profitability of lower daily gains (2 pounds per day) on home-grown feed compared to normal feedlot gains (2½ pounds) using high-grain diets. Dr. Lewis Fischer of the Economics Department will conduct an economic analysis of feed and management costs in relation to cattle sale returns.

Consumer and packer acceptance

Although it has been proven in a Guelph study that properly fed dairy steers are able to obtain the highest grade (A1) if the new federal beef grading system is strictly interpreted, the discouraging experience of farmers has been that their Holstein beef is generally rated lower. It appears that at the large packers, the old system of grading, which down-grades dairy-beef because of low fat content, seems to prevail. The result is that raising dairy-beef is not a worth-while enterprise for farmers.

The average consumer hasn't had much chance to eat steaks and roasts from dairy origin (our hamburger often is), but the students in Food Science have done some taste-testing. Although they could tell the difference between Holstein beef and the western beef breeds (A1 grade) of similar weights, the group was divided 50-50 as to preference.

Dr. Tom Beveridge of the School of Food Science will be responsible for further testing — setting up panels who will compare the two types of beef for taste and tenderness. He will also gather detailed grading information on quality and yield.

Is it far fetched to think that possibly in the future dairy-beef could become our premium beef, just as "barley beef" (barley-fed Holstein) was in the 1960s in England? Proper management may be the key to building up this new farming enterprise in Quebec — this is what Macdonald College is helping to demonstrate.

FARM WELDING SPARKS INTEREST

No one was more surprised than Professor Eric Norris, an Agricultural Engineer at Mac, when his new evening course, "Farm Welding" was completely filled only two weeks after it was advertised. Why so popular? A little detective work showed him that there just aren't a lot of places for interested people to learn hobby welding. Add to that the expense of repairs, work time lost if you have to take a broken machine to town and the satisfaction of knowing how to fix your own equipment, and we probably have most of the reasons for a sell-out course in welding.

Although it is called "Farm Welding", the course concentrates on basic welding techniques. After completing the 10 lessons, a person should have enough skill to make simple repairs on his own machinery; he has not been trained to the level required for technical welding or sculpture. Both arc and flame welding were taught by Professor Norris and Jean-Pierre Laplaine, who is a Senior Technician in Horticulture and an expert welder. Next winter, Jim Cooper, a retired Professor of Agricultural Engineering and a very accomplished welder, will

replace Jean-Pierre Laplaine. The class of 20 is divided into two groups, each one taking five evenings in each type of welding. While 60 per cent of class time is spent in welding practice, there is also additional instruction in related subjects, such as the identification of metals, physical properties of metals and safety. Students are encouraged to bring to class anything of their own which needs repair, since they don't usually buy their own welders until they have finished the course.

The people enrolled in last winter's course had varied backgrounds. Professional farmers, weekend and hobby farmers, suburban people, and college students made up the class of eager novices. (There were no women in the course, but they are certainly welcome.) Most had had no welding

experience — one or two had welded previously although they had received no formal instruction. They take the course very seriously — Professor Norris feels that this is partly due to the cost of the course, \$60 fee plus \$35 for materials — but some of the motivation likely comes from the enthusiasm of the teachers and the interest they show in their subject.

"Farm Welding" will be taught again in the winter of 1978. People who are keen to study welding should apply early, since last year there were far more applications than spaces in the course.

The skill of welding is a real plus for any farmer or an asset to anyone who uses equipment which sometimes requires this type of repair.



Face protected by a mask, Prof. Eric Norris demonstrates an arc weld.

MACDONALD COLLEGE EXTENSION COURSES

1977-78

MACDONALD COLLEGE:

Macdonald College is located at Ste. Anne de Bellevue, on the western tip of the Island of Montreal, about 20 miles from downtown Montreal.

Entrance to the campus may be made from the Lakeshore Road, and by the Trans Canada Highway Exit 26 westbound via Ste. Marie Road and the overpass which leads to the farm, and eastbound Exit 26 and the service road. Also from Highway 2 & 20 at the Ste. Anne de Bellevue underpass.

REGISTRATION:

Registration by mail or in person is **now open**. The earlier you register the better the opportunity for you to attend the course of your choice, particularly if the class is limited. We will accept post-dated cheques, dated the first of the month the particular course opens.

To register by mail, completed application form (see page 21), together with cheque or money order made payable to Macdonald College, should be sent to Evening Courses, Extension Department, P.O. Box 237, Macdonald College, P.Q. H0A 1C0. For further information telephone: (514) 457-6580, local 226 or 227.

Day Registration: Extension Department, Room M014, basement of the Main building 9:00 a.m. to 12 noon and 1:30 to 4:30 p.m. Monday to Friday inclusive. We strongly advise early registration as a minimum of 10 students is required in order to present a course.

REFUNDS:

To obtain a refund, the student card of admission, as well as any material handed out in class, must reach the Extension Department before the second lecture in the course is given; this can be done by mail or in person. A refund, less \$5.00 per course, will be mailed to the student within six weeks. No

refund will be made to a student who registers after the second lecture in a course.

Allowances cannot be made for a change of personal plans including transfers or additional commitments which a student may accept after arranging his/her course schedule.

FEE:

The fee, as indicated for each course, is payable in advance at time of registration.

RECEIPTS:

For those who require receipts for income tax, forms in duplicate will be available at the last lecture of the course.

CHANGE OF ADDRESS:

Students should inform the Extension Department of any change of address after registration. The course in which the student is registered should be indicated.

CLASSROOMS:

Buildings and room numbers for all courses will be posted on the Extension Department Directory Board located in the foyer of the front entrance to the Main Building. The building and room number may also be obtained by telephoning the Extension Department, 457-6580, local 226 or 227.

CANCELLATION OF CLASSES:

If a class must be cancelled, notice to that effect will be made on Radio Station CJAD.

PARKING:

Ample parking space and no parking fee.

COURSES

FALL TERM

SMALL-SCALE SWINE PRODUCTION

Prof. T. G. Hartsock, Animal Science Department. 10 lectures of 2½ hours, Thursdays at 7:30 p.m., beginning September 22 through November 24, 1977. Agriculture Building, Macdonald College. Fee \$60.

This course is intended for persons with little or no experience with swine but who may be interested in rearing small numbers of swine as a side operation or on a hobby-type farm. The course will include a discussion of the various aspects of small-scale swine production as well as farm visits for demonstrations of routine management practices, buildings, equipment, baby pig care, and meat cutting.

FIELD CROP PRODUCTION

Prof. N. C. Lawson, Plant Science Department. 10 lectures of 2 hours, Thursdays at 8 p.m., beginning September 22 through November 24, 1977. Agriculture Building, Macdonald College. Fee \$60.

A course for those who are about to buy or have just bought a farm. Topics covered will be the choice of crops, with emphasis on their comparative potential as sources of energy and protein for livestock feeding, as well as the basic considerations in field management of hay and pasture crops, cereals, corn, and seed proteins.

FARM MECHANIZATION AND LAND DRAINAGE

Prof. E. R. Norris and Stephen Ami, Agricultural Engineering Department. 6 lectures of 2 hours, Tuesdays at 7 p.m., beginning September 20 through October 25, 1977. Agricultural Engineering Shop, Macdonald College Farm. Fee \$40.

Topics to be discussed will include the following: Land drainage and improvements; Farm equipment requirements; Maintenance of farm machinery.

IS FARMING FOR YOU?

Rudi Dallenbach, Director, Macdonald College Farm. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning September 13 through November 15, 1977. Farm Centre, Macdonald College. Fee \$60, or \$9 a lecture.

This practical course is designed to acquaint you with the many and varied aspects of country living and farming. The following topics will be discussed:

1. What to look for when buying a farm
2. Visit to Macdonald College Farm
3. How to organize your farm
4. How to improve and manage your soils
5. Taxation for part-time farmers
6. Machinery and building needs for your farm
7. Cash crop farming
8. Planning a forage program
9. Livestock on the farm
10. Open forum.

PRIVATE FORESTRY AND CONSERVATION

Coordinated by Prof. A. R. C. Jones and Prof. J. D. MacArthur, Renewable Resources Department. 10 lectures of 2 hours, Thursdays at 7:30 p.m., beginning October 6 through December 8, 1977. Biology Building, Macdonald College. Fee \$60.

A practical course in conservation-oriented management for private forest owners with special attention to forest resources and values, management alternatives, and multiple-use possibilities. It will include: tree identification, forest ecology, growth of trees and stands, silvicultural practices, reforestation and plantation management, forest protection, principles of fish and game management, water conservation, Christmas tree culture, sugarbush management, aesthetic use of trees, marketing information, service organizations, and legal matters of concern to small forest owners and managers. Field trips to interesting operations will be arranged.

REGISTRATION IS NOW OPEN

TAXATION FOR PART-TIME FARMERS

Eric Purdie. 3 lectures of 2 hours, Wednesdays at 8 p.m., November 23, 30, and December 7, 1977. Farm Centre, Macdonald College. Fee \$25.

SUGAR MAPLE AND MAPLE SYRUP

Coordinated by Prof. J. D. MacArthur, Curator, Morgan Arboretum. 6 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning October 11 through November 15, 1977. Biology Building, Macdonald College. Fee \$40.

A course to present basic information on the sugar maple species and on production of maple syrup. It will include discussion of:

- 1. Silvics and silviculture of sugar and black maples
- 2. Development of productive sugar groves
- 3. The phenomenon of sap flow and methods of sap collection and handling
- 4. Processing maple sap to produce maple products
- 5. Special problems and possible solutions
- 6. Sources of information on the various aspects of the maple industry.

BUTCHERING

Richard Channon, Animal Science Department. 5 sessions of 2 hours, Tuesdays at 7 p.m., beginning September 27 through October 25, 1977. Swine Centre, Macdonald College Farm. Fee \$35. Class limited to 15.

Cutting of Beef, Pork, and Lamb for home use.

ESTABLISHING AND OPERATING A SMALL APPLE ORCHARD

Richard Saul. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning September 13 through November 15, 1977. Agriculture Building, Macdonald College. Fee \$60.

Designed for those who either are thinking of establishing an orchard on their farm or renovating an old one. Topics to be covered will include: selection of an orchard site; selection of variety of apple, rootstock, where to obtain same, and approximate costs; when and how to graft, bud, and plant trees in the nursery and orchard; fertilizing and spraying programs; training and pruning methods, topworking of old trees; hormone sprays and harvesting techniques; storage and marketing of apples, includes "pick your own" method.

GOAT HUSBANDRY

Martine Gadbois. 8 sessions of 2 hours, Wednesdays at 7:30 p.m., beginning September 21 through November 9, 1977. Farm Centre, Macdonald College. Fee \$50.

- 1. Introduction
- 2. Breeds — how to buy
- 3. Feeding
- 4. Housing
- 5. Care and management
- 6. Visit to a herd
- 7. Milking — equipment
- 8. By-products (milk, meat, hides, etc.)

SELECTION AND CARE OF BREEDING STOCK

Coordinated by Jim Houston, Asst. Director, Macdonald College Farm. 10 sessions of 2 hours, Thursdays at 7 p.m., beginning September 22 through November 24, 1977. Farm Centre, Macdonald College. Fee \$60.

A practical course, featuring sheep, swine, beef, dairy, and poultry, demonstrating how farm animals are evaluated and handled.

PLOWING COURSE

Coordinated by Roméo Besner, assisted by René Renaud. 3 sessions of 3 hours at 9.00 a.m. on Saturdays: October 15, 22, and 29, 1977. Location to be announced. Fee \$75.

The parts of the plow and adjustment. Instruction and practice in techniques in good plowing. Techniques of field layout, opening, and finishing. Each student will have an opportunity to plow.

COURS DE LABOUR

Coordonné par Roméo Besner, assisté de René Renaud, 3 cours de 3 heures samedi à 9.00 a.m.: les 15, 22 et 29 octobre, 1977. Emplacement à être annoncé. Le coût \$75.

Les pièces de la charrue et leur ajustement. Instruction et pratique en techniques de bon labour. Techniques de tracés, l'ados et la finission d'une parcelle. Chaque étudiant aura l'opportunité de faire manoeuvrer la machinerie.

REGISTRATION IS NOW OPEN

HORSE MANAGEMENT 1A

Pam Dillingham. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning September 27 through November 29, 1977. Agriculture Building, Macdonald College. Fee \$60.

This course will be of general interest to both horse lovers, owners, and potential owners. It will include discussion of: the history and development of the horse; the various breeds, training, development, nutrition, basic veterinary care, stable care, competition riding, and the economic potentials. Two practical stable sessions will be included.

A HOBBY GREENHOUSE — WITH SUCCESS

Ede J. G. Gyapay, Plant Science Department. 5 lectures of 2 hours, Thursdays at 7:30 p.m., beginning September 22 through October 20, 1977. Agriculture Building, Macdonald College. Fee \$35.

Construction: location, ventilation, glazing, floor and walks, equipment, heating and cooling systems.

Operation: light, temperature, moisture, soil, fertilizers, plant disorders, insects and diseases, spraying, dusting and fumigation.

MANAGING THE SMALL POULTRY FLOCK

Prof. R. B. Buckland, Animal Science Department. (Offered in alternate years, to be given in 1978-79.)

375-450A Special Topics in Renewable Resources
(2 credits)

PHOTOGRAMMETRY AND PHOTO-INTERPRETATION

Coordinated by Prof. A. R. C. Jones, Renewable Resources Department. Eric Thompson, Lecturer. 13 lectures of 4 hours, date and time to be announced. Fee \$90.

The use of air photographs in resource management will be examined. Principles of photogrammetry (the science of obtaining reliable measurements from photographs) will be studied. General principles of photo-interpretation will then be discussed. Textbook \$20, Lab fee \$10-\$15.

BEEES AND BEEKEEPING

Prof. V. R. Vickery, Curator, Lyman Museum. 10 lectures of 2 hours, Mondays at 7 p.m., beginning September 12 through November 21, 1977. Biology Building, Room B204, Macdonald College. Fee \$60. Class limited to 40. Thanksgiving Monday, College holiday.

Life and behaviour of honeybees. Insect pollination of plants. Practical beekeeping.

Textbook — "Complete Guide to Beekeeping" by R. A. Morse, 1972, Dutton & Co. Available at Macdonald College Bookstore, approx. \$9.25.

REAL ESTATE LAW

Allan A. Mass. 10 lectures of 2 hours, Thursdays at 7 p.m., beginning September 15 through November 17, 1977. Agriculture Building, Macdonald College. Fee \$60.

A practical course designed to explain basic elements of Quebec real estate law, of interest to both rural and urban property owners. Topics will include:

1. Purchase and sale
2. Leases, rent control, and condominiums
3. Mortgages
4. Servitudes, restrictive covenants and title defects
5. Civil liability and insurance
6. Zoning and environmental controls
7. Taxation
8. Real estate brokers.

Participants will be provided with examples of the various deeds discussed in the course.

PROFITABLE FARMING

Marcel Couture, Diploma in Agriculture Program. 10 lectures of 2 hours, Wednesdays at 7:30 p.m., beginning September 21 through November 23, 1977. Centennial Centre Project Room, Centennial Centre, Macdonald College. Fee \$60.

This course is designed for the individual who is about to buy or has bought a farm. The course has been prepared with one major objective in mind, that is "how to make your farm more profitable".

The topics covered will be as follows: farm credit, farm records, taxation as it applies to the small and/or part-time farmer, budgeting, machinery, crop and livestock management, costs, and other topics as agreed by the group, e.g., farm visits, farm partnerships and corporations, estate planning for the farmer, etc.

REGISTRATION IS NOW OPEN

BIO-ORGANIC GARDENING AND FARMING

Dr. Philip R. Warman, Department of Renewable Resources. 10 lectures of 2 hours, Wednesdays at 7.30 p.m., beginning October 12 through December 14, 1977. Biology Building, Macdonald College. Fee \$60. Class limited to 30.

Purpose: To develop an understanding of the environmentally sound methods of food production through the use of natural fertilizers and natural insect controls. Topics covered will be:

1. What is Bio-Organic Gardening and Farming? Why bother?
2. Soil — the nature and properties of soils
3. Soil management for crop production; soil organisms
4. Organic matter — characteristics and maintenance
5. The use of animal manures and composts
6. Using green manures and vegetable residues
7. Harmful and beneficial insects — Insects as predators and parasites
8. Naturally occurring insecticides
9. Physical and mechanical pest and weed control — Disease control
10. Insect repellents; Companion planting.

CANVASWORK — "Let's take another look at Needlepoint".

Marlene Ballantyne. 6 sessions of 2 hours, Wednesdays at 7:30 p.m., beginning September 14 through October 19, 1977. Agriculture Building, Macdonald College. Fee \$40. Class limited to 15.

A beginner's course, which also offers scope for the experienced needleworker. Experimentation and creativity are encouraged.

Twenty-five needlepoint stitches are taught. The student makes a small Christmas tree ornament during the first week. The major project is the creating of a pillow or wall hanging, incorporating as many of the stitches as the student desires. The following topics are also taught: understanding various kinds of canvases and wools; designing needlepoint by charting and sketching on canvas; blocking and finishing. All materials required (\$15) available at class.

COMPUTERS — COBOL

John Brohan, Macdonald College Computing Centre. 10 lectures of 2 hours, Wednesdays at 7 p.m., beginning September 21 through November 23, 1977. Macdonald College. Fee \$60.

COBOL is the most widely used computer programming language for commercial applications.

The course is designed to teach COBOL and for people who need to know more about computers. During the course the students will write two computer programs and run them on the IBM 370/115 at Macdonald College. No previous computer experience is assumed.

A charge of \$12 will be made to offset computer costs. Any introductory text to COBOL would be useful — buy the cheapest you can obtain.

GARDENING FOR ALL SEASONS

Ede J. G. Gyapay, Plant Science Department. 5 lectures of 2 hours, Mondays at 7:30 p.m., beginning September 19 through October 24, 1977. Agriculture Building, Macdonald College. Fee \$35. Thanksgiving Monday, College holiday.

The course will include discussion of: Fall preparation of compost; soil preparation, manuring, and fertilizing; pruning, cleaning, spraying; sowing, planting. Winter storage of bulbs, tubers, plants, and vegetables; protection of shrubs, fruit trees, and small fruits. Spring pruning, cleaning, and spraying shrubs and fruit trees; soil preparation, manuring, and fertilizing; seedlings to be prepared indoors for later planting in the garden.

WINE AND WINE TASTING

Marcel Allard, Professional chemist. 10 sessions of 2 hours, Thursdays at 7:30 p.m., beginning September 22 through November 24, 1977. Agriculture Building, Macdonald College. Fee \$60.

General discussion on the history and the making of wine, as well as grape varieties. Tasting with identification of the various flavours.

Eight lectures of application on wines from the following regions: Bordeaux, Rhone, Alsace, Loire, Bourgogne, Champagne, Canada, and Spain. Comprised of a minimum of three wines per session. A supplementary charge of \$25 will be made to offset the cost of supplies consumed.

REGISTRATION IS NOW OPEN

JARDINS ET PARTERRES

Diane L. Benoit. 4 cours de 2 heures, lundi à 7 p.m., commençant le 19 septembre jusqu'au 17 octobre, 1977. Agriculture Building, Macdonald College. Le coût \$30. Maximum 20 étudiants. Jour de l'Action de Grâce, congé du Collège.

1. Légumes de saison froide
2. Légumes de saison chaude
3. Fleurs annuelles et de parterre
4. Rocailles et fleurs vivaces.

La préparation du sol, la date et l'entretien des semis, la transplantation et la fertilisation, les insectes et maladies à surveiller et la récolte. Les fleurs annuelles et vivaces et leurs temps de floraison, la planification des parterres et des rocailles, le choix des variétés et leurs exigences.

MONTREAL WALKS AND TALKS

Joy Schreiber. 6 sessions of 2 hours, Wednesdays at 6 p.m., beginning September 7 through October 12, 1977. Agriculture Building, Macdonald College. Fee \$40.

Discover the history of Montreal by examining the early French, Victorian, Art Deco and contemporary buildings in the city.

Canadiana Studies:

1. "Old stones can talk" (slide lecture)
2. Old Montreal Walk No. 1
3. Victorian and contemporary Montreal
4. Canadian Art (slide lecture)
5. Old Montreal Walk No. 2
6. City Tour (by bus).

HOME REPAIRS AND IMPROVEMENTS

Dr. John B. Gradwell. 10 sessions of 2 hours, Mondays at 7 p.m., beginning September 19 through November 28, 1977. Macdonald College. Fee \$60. Class limited to 20. Thanksgiving Monday, College holiday.

A practical course to enable anyone to make basic additions, and to do repairs and maintenance in the home. The course includes simple plumbing, electrical and heating systems repairs; finishing a basement room; building or refinishing furniture of wood or plastic; the selection and use of hand and small electrical tools.

STAINED GLASS WORKSHOP

John Lehman. 10 sessions of 3 hours, Wednesdays at 7 p.m., beginning September 14 through November 16, 1977. Macdonald College. Fee \$60. Class limited to 15.

This course will deal with the technique of glass cutting with the aim of producing leaded glass art objects. Projects will be based on individual initiative and should include one candle chimney, one lamp, and one small window. Prerequisites are patience, perseverance, coordination, and interest.

A charge of \$30 will be made to offset the cost of materials required for the objectives stated. Bring your own tools, e.g., soldering iron, hammer, pliers, and glass cutter.

LET'S QUILT IT

Dorothy Rich. 8 sessions of 2 hours, Mondays at 7:30 p.m., beginning September 19 through November 14, 1977. Main Building, Room M324, Macdonald College. Fee \$50. Class limited to 20. Thanksgiving Monday, College holiday.

The making of a quilt including instructions on colour, design, pattern-making, setting, quilting process and finishing processes. Materials extra.

ACCOUNTING FOR SMALLER BUSINESS

Richard Doyle. 10 lectures of 2 hours, Wednesdays at 8 p.m., beginning September 14 through November 16, 1977. Agriculture Building, Macdonald College. Fee \$60.

The course is designed to introduce the owner of a small business and his/her staff to a basic knowledge of accounting and related matters. The following topics will be discussed:

1. Double-entry bookkeeping
2. Financial statements and how to read them
3. Budgetary control and how to use it
4. Concepts of internal control
5. Accounting systems for the smaller business.

REGISTRATION IS NOW OPEN

FINANCIAL PLANNING

Dean H. Ladd. 8 sessions of 2 hours, Wednesdays at 7 p.m., beginning October 5 through November 23, 1977. Agriculture Building, Macdonald College. Fee \$50.

An introductory course in planning the source, requirements, and utilization of cash.

Topics to be covered include the following:

1. Fundamentals of accounting
2. Cash accounting
3. Sources of cash — benefits and disadvantages
4. Budgeting and sales forecasting
5. Cash flow
6. Relationship to specific businesses.

TRY THE RECORDER

Stephen Olive. 8 sessions of 2 hours, Wednesdays at 8 p.m., beginning September 28 through November 16, 1977. Agriculture Building, Macdonald College. Fee \$50. Class limited to 15.

This course is intended for the new and intermediate student of the Recorder. For the novice, the course will include introductory music theory, reading music, and instrumental technique. For the intermediate level student, consort playing and more advanced compositions will be stressed.

PARASITES AND MAN IN QUEBEC AND CANADA

Coordinated by Drs. N.A. Croll and M.E. Rau, with Staff and members of the Institute of Parasitology, Macdonald College. 10 lectures of 2 hours, Wednesdays at 7:30 p.m., beginning October 5 through December 7, 1977. Agriculture Building, Macdonald College. Fee \$60.

Parasites are a significant component in the health and ecology of Canadians. This course will present a broad-ranging discussion from a group of scientists actively involved in the problems of human parasitology in Quebec and Canada. The lectures will emphasize the epidemiological and ecological aspects of parasitology in rural and urban environments. While clinical and diagnostic studies will be briefly included, they will not be stressed. The parasitic diseases which result from international travel and immigration will be discussed together with those associated with pets, food, the farm environment and with recreations such as swimming, hunting, and fishing. The course will be directed at the non-specialist who is an interested member of the public but will be useful to those in the health professions, wildlife, planners and biologists.

INTRODUCTORY PHOTOGRAPHY

Michael Lyon. 10 sessions of 2 hours, Tuesdays at 7:30 p.m., beginning September 20 through November 22, 1977. Agriculture Building, Macdonald College. Fee \$60. Class limited to 12.

This course is designed to familiarize beginners with basic photographic procedures and techniques. The theoretical part will be an in-depth look at cameras, film, and paper with extensive use of overhead transparencies and slides. The practical side will be student use of all facets of darkroom procedure. A 35mm Single-Lens-Reflex camera will be necessary. A supplementary charge of \$15 will be made to cover cost of materials.

WALL HANGINGS — MACRAME, NON-LOOM WEAVING, HOOKING

Vera Donefer. 10 sessions of 2 hours, Tuesdays at 7:30 p.m., beginning September 13 through November 15, 1977. Agriculture Building, Macdonald College. Fee \$60. Class limited to 15.

Beginners course for exploration of non-loom weaving, macramé, hooking-wrapping, and fiber structures.

All techniques are taught for developing skills that are best for you; they teach the fundamentals, allow you to experiment, to improvise, to take off in any direction. They encourage creativity. An advantage of off-loom weaving is that anyone can produce a wall hanging with the minimal materials and little equipment. Materials extra.

YOGA FOR RELAXATION

Barbara MacKay. 8 sessions of 2 hours, Wednesdays at 8 p.m., beginning September 21 through November 9, 1977. Macdonald College. Fee \$50.

Relaxation and concentration postures and exercises to improve our physical and emotional well-being are the main aims of this course. Beginner and intermediate students of Yoga are welcome. We will strive for independence allowing each person to continue Yoga on their own by the end of the course.

Please wear loose clothing and allow 2 hours for digestion before the Yoga class.

REGISTRATION IS NOW OPEN

WINTER TERM

SHEEP FARMING

Coordinated by Henry Garino, Animal Science Department. 6 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning February 28 through April 4, 1978. Agriculture Building, Macdonald College. Fee \$40.

A practical course for people interested in sheep as a hobby or as the basis for a larger enterprise.

The course will cover the relative importance of sheep in Quebec. Handling, breeds, health, feeding, and managerial aspects of sheep production will be dealt with in detail.

GROW YOUR OWN TREES, SHRUBS, AND FLOWERS

H. A. Kouwenberg and R. J. Watson. 10 sessions of 2 hours, Tuesdays at 7 p.m., beginning January 10 through March 14, 1978. Biology Building, Macdonald College. Fee \$60.

A practical course to introduce the amateur to the principles of plant propagation and the establishment of trees, shrubs, and flowers. The course includes the basic techniques of propagation; woodlot and Christmas tree growing; sugarbush management and equipment; nursery and greenhouse management; exotic plants and flowers; small fruits; the establishment of seeds, seedlings, and cuttings to regenerate plants. Planning for planting, equipment, layout, selection of species, and techniques of pruning, care, and maintenance.

BEEF MANAGEMENT

Coordinated by Lynn Forgrave, Diploma in Agriculture Program. 10 lectures of 2 hours, Mondays at 7:30 p.m., beginning January 16 through March 20, 1978. Farm Centre, Macdonald College. Fee \$60.

The course is intended to introduce the participant to management techniques currently used in beef production. The direction of the course is toward the small operation used as a hobby farm or as the first step into commercial beef production. Special emphasis will be given to breeding, feeding, and housing systems of both cow-calf and feedlot operations. Class participation is encouraged and hopefully real-life problems will originate from the group for discussion.

WATER FOR FARM, HOME, AND COTTAGE

Stephen Ami, Agricultural Engineering Department. 6 lectures of 2 hours, Wednesdays at 7:30 p.m., beginning January 18 through February 22, 1978. Agricultural Engineering Shop, Macdonald College Farm. Fee \$40.

Quality and quantity of water needed for home, cottage, and farm; water pumps and pressure distribution systems; treatment to reduce water hardness and remove contaminants; location and construction of wells and ponds; construction and maintenance of septic tanks and disposal fields, and other means of waste water disposal.

CONTROLLING CROP DISEASES, INSECTS, AND WEEDS

Coordinated by Profs. R. H. Estey, R. K. Stewart, and A. K. Watson, Plant Science and Entomology Departments. 10 lectures of 2 hours, Tuesdays at 8 p.m., beginning January 10 through March 14, 1978. Biology Building, Macdonald College. Fee \$60.

A course for those who have recently acquired farmland. It will cover the practical aspects of field crop disease, insect, and weed control including discussions of the identification, prevention, and control of common plant diseases, weeds, and insect pests.

330-410B COMPARATIVE AGRICULTURE (Value 3 credits)

Coordinated by Staff, and guest lecturers. Faculty of Agriculture, Macdonald College. 12 lectures of 3 hours, beginning week of January 9, 1978. Date and time to be announced. Fee \$70.

Study of contrasts in physical, biological, and social resource bases for agriculture between temperate and tropical regions; organization of agricultural production in developing countries; agriculture in the development process; technology transfer and aid programs for agriculture. Case studies will be used.

This course also available for non-credit.

REGISTRATION IS NOW OPEN

AGRICULTURAL FRENCH VOCABULARY

Prof. Jacqueline Gerols, Department of Renewable Resources. 10 sessions of 2 hours, Thursdays at 7 p.m., beginning January 19 through March 23, 1978. Agriculture Building, Macdonald College. Fee \$60.

A survey of farm terminology in French for those who already have a basic knowledge of the language but wish to acquire a more technical vocabulary in agriculture.

HORSE MANAGEMENT 1B

Pam Dillingham. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning February 7 through April 11, 1978. Agriculture Building, Macdonald College. Fee \$60.

This course is a **repeat** of the Fall Term.

AGRICULTURAL PROJECT ANALYSIS (A Professional Development Course)

Peter Appleton, Department of Agricultural Economics. 13 sessions of 3 hours, Wednesdays at 6 p.m., beginning January 11 through April 5, 1978. Agriculture Building, Macdonald College. Fee \$90.

Designed for professional agriculturalists and engineers consulting internationally. This course will train personnel in accepted procedures for Agricultural Project Analysis.

Course content approximates similar courses offered by the World Bank. Concepts discussed will include financial and economic analysis, farm income analysis, partial and complete budgeting, benefits and costs, rural infrastructure, rural credit, and the role of agriculture in rural development projects. Numerous case studies of agricultural projects will be used.

BUTCHERING

Richard Channon, Animal Science Department. 5 sessions of 2 hours, Tuesdays at 7 p.m., beginning January 24 through February 21, 1978. Swine Centre, Macdonald College Farm. Fee \$35. Class limited to 15.

This course is a **repeat** of the Fall Term.

FARM WELDING

Coordinated by Prof. E. R. Norris and Jim Cooper. 10 sessions of 2 hours, Mondays at 7:30 p.m., beginning January 16 through March 20, 1978. Agricultural Engineering Shop, Macdonald College Farm. Fee \$60. Class limited to 20.

The course is designed for the novice welder who wants to develop sufficient skill in oxyacetylene and electric arc welding to make minor repairs and small fabrications around the farm. Topics to be covered are: Identification of metals; physical properties of metals; equipment for welding; identification, specifications, and selection of welding rods; techniques of arc and flame welding; brazing and silver soldering; use of the cutting torch; safety in welding.

60% of total class time will be devoted to welding practice. A charge of \$35 will be made to offset the cost of materials consumed.

PROFITABLE FARMING

Marcel Couture, Diploma in Agriculture Program. 10 lectures of 2 hours, Wednesdays at 7:30 p.m., beginning January 25 through March 29, 1978. Centennial Centre Project Room, Centennial Centre, Macdonald College. Fee \$60.

This course is a **repeat** of the Fall Term.

SELECTION AND CARE OF BREEDING STOCK

Coordinated by Jim Houston, Asst. Director, Macdonald College Farm. 10 sessions of 2 hours, Thursdays at 7 p.m., beginning January 19 through March 23, 1978. Farm Centre, Macdonald College. Fee \$60.

This course is a **repeat** of the Fall Term.

TAXATION FOR PART-TIME FARMERS

Eric Purdie. 3 lectures of 2 hours, Wednesdays at 8 p.m., March 15, 22 and 29, 1978. Farm Centre, Macdonald College. Fee \$25.

This course is a **repeat** of the Fall Term.

REGISTRATION IS NOW OPEN

OUTDOORS '78

Prof. A. R. C. Jones, Renewable Resources Department, and guest lecturers. 10 lectures of 2 hours, Wednesdays at 7:30 p.m., beginning March 1 through May 3, 1978. Biology Building, Macdonald College. Fee \$60. Class limited to 25.

These lectures and field outings, for the amateur outdoor person, describe basic equipment and essential skills. Objectives are to provide added enjoyment of the natural environment through the mastery of basic techniques in such outdoor activities as hiking, mountaineering, bird-watching, plant identification, orienteering, canoeing, ski-touring, family camping, and safety. An understanding of ecology and conservation practices and an introduction to the basic elements of survival and enjoyment of the outdoors are essential parts of the course. Several outings will be held to emphasize the content of the lectures.

BIO-ORGANIC GARDENING AND FARMING

Dr. Philip R. Warman, Department of Renewable Resources. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning February 7 through April 11, 1978. Biology Building, Macdonald College. Fee \$60. Class limited to 30.

This course is a **repeat** of the Fall Term.

IS FARMING FOR YOU?

Rudi Dallenbach, Director, Macdonald College Farm. 10 lectures of 2 hours, Tuesdays at 7:30 p.m., beginning January 17 through March 21, 1978. Farm Centre, Macdonald College. Fee \$60, or \$9 a lecture.

This course is a **repeat** of the Fall Term.

INTRODUCTORY PHOTOGRAPHY

Michael Lyon. 10 sessions of 2 hours, Tuesdays at 7:30 p.m., beginning January 10 through March 14, 1978. Agriculture Building, Macdonald College. Fee \$60. Class limited to 12.

This course is a **repeat** of the Fall Term.

LET'S QUILT IT

Dorothy Rich. 8 sessions of 2 hours, Mondays at 7:30 p.m., beginning January 16 through March 6, 1978. Main Building, Room M324, Macdonald College. Fee \$50. Class limited to 20.

This course is a **repeat** of the Fall Term.

YOGA FOR RELAXATION

Barbara MacKay. 8 sessions of 2 hours, Wednesdays at 8 p.m., beginning January 11 through March 1, 1978. Macdonald College. Fee \$50.

This course is a **repeat** of the Fall Term.

STAINED GLASS WORKSHOP

John Lehman. 10 sessions of 3 hours, Wednesdays at 7 p.m., beginning January 18 through March 22, 1978. Macdonald College. Fee \$60. Class limited to 15.

This course is a **repeat** of the Fall Term.

PHOTOGRAMMETRY AND PHOTO-INTERPRETATION

Eric Thompson, Lecturer. 13 lectures of 4 hours, date and time to be announced. Course offered this term for non-credit. Minimum of 15 students required to open. Fee \$90.

This course is a **repeat** of the Fall Term.

FINANCIAL PLANNING

Dean H. Ladd. 8 sessions of 2 hours, Wednesdays at 7 p.m., beginning January 25 through March 15, 1978. Agriculture Building, Macdonald College. Fee \$50.

This course is a **repeat** of the Fall Term.

FARM ANIMAL BEHAVIOUR

Prof. T. G. Hartsock, Animal Science Department. 5 sessions of 2½ hours, Thursdays at 7:30 p.m., beginning April 13 through May 11, 1978. Farm Centre, Macdonald College. Fee \$35. Course limited to 30.

Course will include films, discussions, and observations of farm animals. Reproductive behaviour and pig-fighting will be covered.

EDIBLE WILD PLANTS

Wendy Dathan. 6 lectures of 3 hours, Wednesdays at 7 p.m., beginning May 10 through June 14, 1978. Biology Building, Room B212, Macdonald College. Fee \$50. Class limited to 25.

How to recognize, where to find, and how to use our local edible wild plants.

Textbook — "Edible Wild Plants" by Bradford Angier, available at Macdonald College Bookstore, approx. \$5.

BEEES AND BEEKEEPING

Prof. V. R. Vickery, Curator, Lyman Museum. Length of course 5 weeks, 10 lectures of 2 hours, Mondays and Wednesdays at 7 p.m., beginning April 17 through May 17, 1978. Biology Building, Room B204, Macdonald College. Fee \$60. Class limited to 40.

This course is a **repeat** of the Fall Term.

ESTABLISHING AND OPERATING A SMALL APPLE ORCHARD

Richard Saul. Length of course 5 weeks, 10 lectures of 2 hours, Tuesdays and Thursdays at 7:30 p.m., beginning April 4 through May 4, 1978. Agriculture Building, Macdonald College. Fee \$60.

This course is a **repeat** of the Fall Term.

A HOME VEGETABLE GARDEN

Ede J. G. Gyapay, Plant Science Department. 6 lectures of 2 hours, Mondays at 7:30 p.m., beginning March 13 through April 24, 1978. Agriculture Building, Macdonald College. Fee \$40. Easter Monday, College holiday.

1. Planning the garden
2. Soil preparation
3. Seeds, seeding, plants, planting
4. Weed and pest control
5. Particular needs and habits of vegetable crops
6. Spice and medicinal plants.

MONTREAL BIRDS

Coordinated by Bob Carswell and Peter Mitchell, members of the Province of Quebec Society for the Protection of Birds. 10 sessions of 2 hours, Tuesdays at 6 p.m., beginning March 14 through May 16, 1978. Agriculture Building, Macdonald College. Fee \$60. Class limited to 25.

Discussions and field trips devoted to identifying spring birds by sight and by sound (and outings to test your skill in this area); seminars on where to look for the various species in the Montreal area, and how best to attract and feed birds and manage your property for this purpose; discussions on migration (including anticipated spring arrival dates); nesting, territoriality, endangered species, conservation, and other topics.

Binoculars needed for field trips (7 x 35 excellent). A good field guide (either Peterson, "A Field Guide to the Birds" or Robbins, Brunn & Zim, "Birds of North America").

GOAT HUSBANDRY

Martine Gadbois. 8 sessions of 2 hours. Wednesdays at 7:30 p.m., beginning April 27 through June 15, 1978. Farm Centre, Macdonald College. Fee \$50.

This course is a **repeat** of the Fall Term.

WALL HANGINGS — MACRAME, NON-LOOM WEAVING, HOOKING

Vera Donefer. 10 sessions of 2 hours, Tuesdays at 7:30 p.m., beginning March 14 through May 16, 1978. Agriculture Building, Macdonald College. Fee \$60. Class limited to 15.

This course is a **repeat** of the Fall Term.

QUEBEC SPRING WILDFLOWERS

Prof. D. W. Woodland, Plant Science Department. (Offered in alternate years, to be given in 1978-79.)

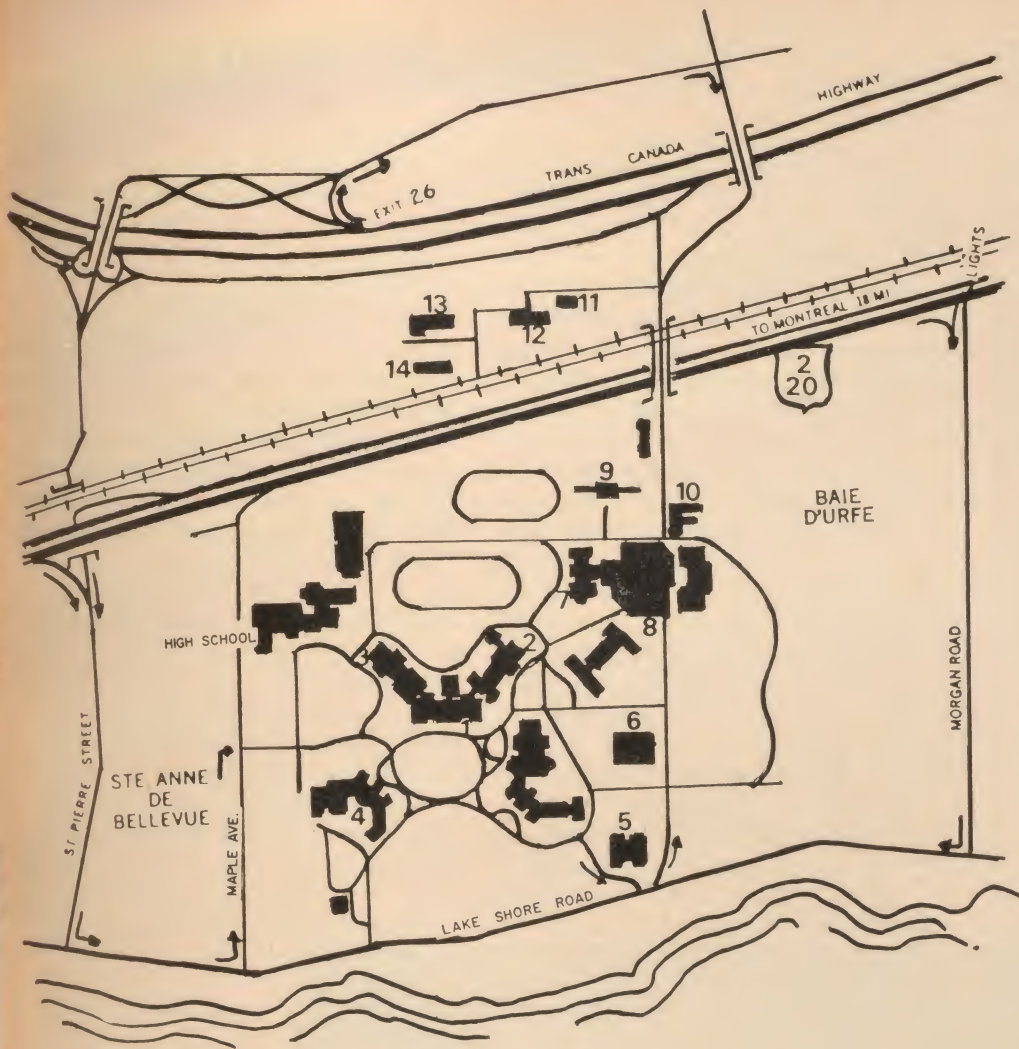
CANVASWORK — "Let's take another look at Needlepoint".

Marlene Ballantyne. 6 sessions of 2 hours, Wednesdays at 7:30 p.m., beginning April 5 through May 10, 1978. Agriculture Building, Macdonald College. Fee \$40. Class Limited to 15.

This course is a **repeat** of the Fall Term.

REGISTRATION IS NOW OPEN

MACDONALD COLLEGE



LEGEND

1. Main Building
2. Biology Bldg.
3. Chemistry Bldg.
4. Brittain Hall
5. Power House
6. Centennial Centre
7. Agricultural Bldg.
8. Macdonald - Stewart Bldg. (under construction)
9. Poultry Bldg.
10. Parasitology
11. Agric. Engr. Shop
12. Farm Centre
13. Swine Building
14. Large Animal Research/Teaching

EVENING COURSES

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Some Hard Facts for Sweet Rewards

by Professor A. R. C. Jones,
Woodland Resources and
Recreation,
Department of Renewable
Resources

The "back-to-the land" movement has sparked a renewed interest in activities that were formerly considered part of general farming. The sugarbush and farm woodlot were part and parcel of these activities. The harvest from the farm forest involved periodic wood sales and firewood and syrup production on an annual basis.

The inflationary spiral, high labour costs, a short season, and heavy start-up expenses using new techniques have all had their

effects on syrup producers still active in the industry. A further more immediate impact on the steadily declining number of commercial syrup producers is the widespread cutting of maple stands spurred on by the "highest-ever" prices paid for hard maple sawlogs. A cut-over maple bush takes 25 years or longer before the new trees can be brought back into production. Heavy exploitation of maple forests for sawlogs and other wood products is not a new phenomenon. Sugar maple is a high-quality hardwood currently in use for a multitude of products such as furniture, flooring, and sporting equipment. In the early days it was the settler's first cash crop — a source of potash and pearl ash, and it has always

been in demand for firewood because of its excellent heating qualities.

The unique feature of the sugar maple forest is its ability to produce at least two useful products. The multiple-crop aspects of managing maple for wood products and syrup, the annual income features of sugaring, and the current high prices and strong demand for syrup have been attracting many non-farm landowners into the business, in some cases with less attractive results.

For a non-resident landowner maple syrup production is not as easy an undertaking, as is, for example, wood products harvest-



The results of pasturing this sugarbush leaves few replacement trees to take over once the mature sap producers have gone. Heavy continuous grazing compacts and destroys the feeding root system, reduces sap flow and generally interferes with the environment favourable to sugar maple.

ing. Wood cutting can be suited to the landowner's available free time. In sugaring the labour inputs are much more time specific. The weather cycle and sap runs infrequently favour the weekends. Hence lost and spoiled sap are only two problems that face a non-resident or weekend syrup producer.

There is little doubt that a sugaring operation can be a rewarding enterprise provided the owner has the minimum resources of land, labour, and capital available, the entrepreneurial skills to go with them, and a penchant for hard work.

The Basic Productive Agents

The land resources for a successful operation include a minimum of 15 to 20 acres of tappable-size (at least 9.6 inches D.b.h.) sugar maple that include 25 to 30 (up to 50 is better) tappable trees per acre as well as the possibility of increasing this number of trees and expanding the acreage over time.

Land that has a good slope in one direction (preferably south) is a further positive factor to aid better sap yields using tubing. A need to protect the maple stand from grazing and use of cultural treatments such as thinnings to improve spacing are added measures that help to increase yields over the long term.

Overall size has been studied by many authorities. In Michigan researchers Gunter and Koelling (1975) suggested 500 to 3,000 tapholes on tubing with vacuum as being the most economical size range, but 58 per cent of Michigan operations have less than 1,000 taps. The largest profit came from 1,795 tapholes and the break-even or zero profit point occurred at 565 tapholes. Minimum costs per tap occurred at a size of 1,620 buckets or \$1.07 (U.S.) per tap and 1,680 taps on tubing with costs of \$0.82 (U.S.) per taphole. Garratt (1975) in a northeastern study of 500 to 4,000 tap operations reported annual

costs at \$0.94 per bucket and \$0.86 per tap on tubing. The break-even point for buckets was 2,200 taps and 1,300 taps on tubing. Winch and Morrow (1956) proposed 500 taps as a minimum-size operation for New York with 1,000 to 1,500 tapholes being more efficient. Dillon (1971) in a classic Ontario economic study of maple syrup management factors on 76 farms found that a minimum of 1,872 taps per farm and an average of 1.4 taps per tree were two of five key indicators to profitability of the enterprise. Only six farms sampled had all five profit factors above the averages determined. These were the most profitable operations. An overall size of at least 1,000 taps is considered a basic minimum for a new operation starting up in the late '70s.

Number of Taps Per Acre

Another important item besides overall size is the number of tappable-size trees or tapholes per acre. A minimum tappable-size tree is at least 9.6 inches in diameter at breast height (a point 4.5 feet above ground). Smaller trees are frequently tapped but Delisle, Morrow, and others suggest that the sap returns from undersize trees are uneconomic considering the capital investment in collecting equipment. Over-tapping and tapping undersize trees slows growth rates and reduces tree vigour, important considerations to the long-term health and yields from any maple stand. In Quebec, Belanger (1974) suggested that a desirable number per acre was 85 taps or 210 per hectare. Dillon reduced his 76 farms data to 70 tapped trees per acre or 98 tapholes per acre.

Tree spacing per acre using buckets or tubing has always been a subject for continuous debate as the more open-grown the trees, the larger the tree crowns and, in general, the sweeter the sap. Roadside trees (barring environmental problems of salt and wind) with large, well developed open-grown crowns amounting to 75 per cent or better total height produce the sweetest sap —

although not necessarily the greatest volumes. Marvin (1967) has shown that there is a positive correlation between high sap sugar content and sap quantity. On the other hand widely spaced trees are more expensive to collect from using either buckets or tubing, and the yield of syrup per acre would be less than for a closer-spaced woods bush. Winch and Morrow proposed 25-30 trees per acre to support 80 to 100 tapholes with a yield of 0.4 to 0.5 U.S. gallons of syrup per tap or 40 U.S. gallons per acre. They reported that less than 25 taps per acre were seldom profitable whereas Willits (1965) suggested that less than 10 trees per acre were not profitable. In Quebec these yields are shown to be unrealistic by Belanger who reports on 26 *érablières* between 1965 and 1968 which averaged 12.9 gallons of syrup per acre. The range for these producers varied from 5.7 gallons to 19.8 gallons per acre. An earlier study (1954 to 1967) of 13 Quebec producers averaged 11.4 gallons of syrup per acre and ranged from 6.5 to 16.2 gallons per acre. In general as the number of taps per acre increased the yields of syrup also increased. The earlier study averaged 89 taps per acre ranging from 56 to 129 taps with the later records averaging 85 tapholes per acre. The more northerly sugarbushes had slightly lower yields per acre. A conservative rule-of-thumb estimate of average production of 10 taps per gallon of syrup produced, which includes good years and bad years, should be attainable in a reasonably well-stocked sugar maple stand.

Nyland (1966), in studying the economics of maple sap production in Michigan, determined the break-even point by tree sizes for sap sales at roadside or delivered to the processor (at a cost of \$0.01 per U.S. gallon). For 5-11 inch D.b.h. trees it was 46 to 61 taps per acre, for 11-15 inch trees it was 31 to 53 taps, and for trees larger than 15 inches he found that 10 taps per acre for sap delivered roadside was the break-even point whereas

24 taps per acre were required if the sap was delivered to a processor. His study emphasized the importance of tree size in determining the economics of sap production. Dillon (1971) reported .18 to .21 gallons of syrup per tap in Ontario, or between six and five tapholes to produce a gallon of syrup. The range varied from 10 to four taps to produce a gallon of syrup.

Sap Volume and Sap-Sugar Content

As the volume of sap per taphole increases and sap sweetness rises, profitability responds accordingly as does syrup quality, particularly with increased sap-sugar content. A producer cannot do much to influence sap sweetness other than improve tree spacing to favour crown development and remove trees of low sap sugar. Sap sweetness is a function of the genetic make-up of the tree and in part of its crown size and location in the maple stand. Sap flow on the other hand can be sharply increased, as much as doubled, with tubing on vacuum over yields from buckets, particularly in seasons with a high percentage of weeping or low flows. A further assist to sap volume and quality improvement late in the season, when using buckets, is improved sanitation of the taphole with a germicidal pellet. Warm weather and a sap-sugar mixture are conducive to microorganism growth which physically blocks the taphole and impedes sap flow, particularly during weeping flows. The placement of a paraformaldehyde pellet in the taphole at the time of tapping helps to control these growths and assist in keeping the taphole free of moulds, yeasts, and other fungi which develop rapidly as the weather warms up. This is an important management need during seasons when high daytime temperatures occur early in the spring. However, overuse favours wood decay in the taphole.

Yawney (1977) explains that an "airtight, leak-free tubing system on vacuum can more than double the amount of sap collected using buckets. A vacuum

tubing system produces sap on days when it would ordinarily not be running, and it increases the rate of sap flow during normal flow periods. Thus a vacuum system can turn a mediocre season into a good year and a good year into an excellent year."

The capital investment in pumps and ancillary equipment are major deterrents to many syrup producers from obtaining these increased yields.

Labour and Capital Expenses

Capital investments in sugaring equipment and sap houses are highly variable. Current costs for medium-sized operations (1,500 to 2,000 taps) have ranged from over \$4 per tap to \$10 per tap on tubing which included construction of a modest sugar house, and the sap processing and storage equipment.

The labour requirements for a satisfactory enterprise include familiarity with the syrup and sugar-maker's art, either resident on the property or available nearby. These skills are becoming rare as the old breed of sugar-maker disappears — but they are important to any successful operation. The skills can be learnt but burnt pans, dark and off-flavour products, and equipment losses are some of the early training expenses of such experience. In many cases labour can be hired but hourly rates soon eat up all the profit in sugaring. As in other forestry operations, wherever possible, it is important to tie labour into a piecework framework whether it be tapping, collecting sap, boiling down, or washing up so that a rate per tap installed, gallons collected or syrup produced, or buckets washed should be established in advance. In this way actual costs incurred can be related to the size of the operation. Because of the range and variability of the weather a great deal of time can be spent standing around waiting for sap to flow; on an hourly rate this can become ruinous despite the current high prices received for maple syrup. Other

methods of using the sugaring resource can be through rental on a per tap basis or share of the crop system, as well as outright sales of sap. Prices for sap are often related to its sap sugar content and current prices range from 10 to 20 cents a gallon for sap-sugar content sap of two to four per cent delivered to the sugar house.

Conversion of sap to syrup is another highly variable cost and the convenience and advantages of oil-fired evaporators are diminishing as oil costs continue to escalate. A minimum of 3½ to four gallons of fuel oil to convert sap to one gallon of syrup is an average figure, and a standard cord of wood will furnish 10 to 15 gallons of syrup depending on the efficiency of the arch being used and the dryness and quality of the wood fuel. Wood chips are a new source of fuel for the evaporator being investigated by Laing (1975) and others.

Summary of Favourable Production Factors

In summary, the most profitable sugaring operations occurred beginning at between 1,000 to 2,000 taps with a concentration of at least 85 taps per acre of 10 inch diameter trees or larger. But large size does not guarantee profitability. Many small operations are much more efficient. Producers should favour, where possible, sweet, large-crowned trees and southward sloping land is a further advantage for tubing installations. Syrup yields per acre averaged 12 gallons on good Quebec operations using buckets. Costs of sap production are lower and yields higher with tubing on vacuum over buckets as tubing costs per tap are less, require less labour, and the labour inputs are much less time specific. Annual costs for tubing are lower and tubing operations broke even at 1,300 taps whereas buckets did not reach the break-even point until 2,200 taps, according to Garratt (1975). When using tubing sap storage capacity of one gallon per tap is a minimum

(Continued on Page 27)

The Family Farm



Published in the interests of the farmers of the province by the Quebec Department of Agriculture.



AIMS OF THE QUEBEC DEPARTMENT OF AGRICULTURE

1. To feed Quebec's population

This is the main objective, all others are natural offshoots. Quebec cannot hope for complete self-sufficiency with respect to agricultural production, but it must aim at a level of self-sufficiency which will enable it to avoid a costly dependence on external suppliers.

2. To safeguard Quebec's farmland

At present, Quebec holds about one million acres of good arable land under speculation. Within the context of a land development policy, the Department of Agriculture will present legislation which will enable it to designate on its own the areas which are suitable for agricultural development and which should be devoted solely to this purpose.

3. To increase productivity

To increase farm production, the Department will concentrate its efforts on obtaining higher yield per surface unit and per animal unit. To this end, it will give absolute priority to improving land under cultivation, through its program of sub-drainage, mechanized works, digging and maintenance of municipal water courses.

4. To develop the agro-food sector

The adoption of an agro-food development program has already paved the way for massive action in this sector; the application of step-up measures

will constitute a second phase. SOQUIA has set to work, and its leaders will try to formulate a collective plan of action.

5. To promote an increased demand for domestic farm products

For this it will be necessary to ensure coordination and a concerted action of provincial inspection services with a view to improving the quality of agricultural products, and then to favour and improve their marketing which is designed to promote agreements

for domestic and export outlets alike.

In working toward the foregoing objectives, there will always be a main concern for encouraging the development of the family or cooperative enterprise in Quebec and of ensuring farmers income parity with specialized workers.

Jean Garon,
Quebec Minister of Agriculture.

Résumé of an address on April 25, 1977 by Jean Garon, Quebec Minister of Agriculture to members of the Order of Agrologists of Quebec.

CROP INSURANCE: GREATER FLEXIBILITY IN THE COLLECTIVE INSURANCE PLAN FOR FIELD CROPS

Producers of field crops intended for animal feed will henceforth have the option of joining or not joining the collective plan of insurance for field crops.

Bill Number Four adopted by the National Assembly makes participation in such a crop insurance scheme optional. The Crop Insurance Act revised in December 1974 required the participation of all farmers of field crops in the zones where the Lieutenant-Governor in Council decreed the establishment of a collective plan of crop insurance. The coming into force of this plan was nevertheless subject to an obligatory consultation of groups and farmers' associations, this being done through some 50 information meetings held throughout the province.

This consultation, which resulted

in the Act adopted by the National Assembly, has proven without a doubt that if Quebec producers of field crops are receptive to the principle of collective crop insurance, they nonetheless wish that participation in such a plan be voluntary.

Recently before the National Assembly, Jean Garon, Minister of Agriculture, summarized the history of crop insurance from its inception in 1967, and insisted on the need to amend the plan regularly in order to meet the needs and aspirations of farm producers in Quebec.

Bill Number Four marks an important step in the evolution of crop insurance in Quebec since it permits the application to this plan of the economic scales pertaining to collective insurance, while respecting the clear prefer-

ence of the producers to remain free to choose whether or not to belong to such a plan.

The pilot projects being carried out in the Abitibi-Témiscamingue and Saguenay-Lac St-Jean areas in cooperation with the U.P.A. Federations concerned, have already shown the merits of collective crop insurance on a voluntary basis. In the Abitibi-Témiscamingue region alone, there are more than 700 participants. The Minister of Agriculture also pointed out the advantages of a collective crop insurance plan. These include a reduction by two-thirds of the premium paid by the producer in comparison with that of the individual plan, and an equal reduction of administrative costs per insurant for the Crop Insurance Board.

As regards its terms and conditions, Bill No. Four makes the Lieutenant-Governor in Council responsible for deciding the establishment of a collective plan of crop insurance in a designated area, keeping in mind the following criteria:

- a) a sufficient number of insured producers in a particular zone;
- b) an adequate insurable value pertaining to the producers in the zone.

Mr. Garon was most pleased with the very favourable reception by the National Assembly of the Bill, considering the limited time the new government had to draft, study and adopt this important legislation. Jean Garon wished to thank the administration and everyone at the Crop Insurance Board for their invaluable work.

In conclusion, the Minister of Agriculture stressed the fact that Bill Number Four was the first piece of legislation concerning agriculture to be adopted on third

reading by the National Assembly and duly assented to by the Lieutenant-Governor since the new government took office. Mr. Garon stated that in the particular area of crop insurance, this Bill shows great respect for the enter-

GRANT FOR THE CONSTRUCTION OF TROUT LAKES ON QUEBEC FARMS

The Quebec Department of Agriculture would like to remind farmers that it is offering them the possibility of supplementing their income by exploiting the water resources on their farm. Through special assistance to anyone having an appropriate site, the Department is encouraging the construction of trout lakes, thereby enabling farmers concerned to earn a substantial additional income.

The Department's assistance is in two forms. First of all, there is the technical aid provided by a team of Department specialists who visit the farmers whose projects have been accepted in order to carry out preliminary studies on the topography and the water supply available and determine the extent of possible construction. Once the projects are under way, they supervise their completion and the putting into operation of piscicultural installations. This technical aid is doubled by substantial financial assistance in the form of a reimbursement to the farmer of 40 per cent of the total construction costs, up to a maximum of \$6,000 per farming enterprise. The grant may also be paid over a certain number of years, thereby allowing anyone just starting out in fish-rearing to carry out his project step by step while learning progressively about this type of activity. With experience, the farmer may gradually improve his rearing techniques and increase his production as he develops efficient marketing of his piscicultural products.

prising nature of the farm producer who, on his own, is capable of making decisions affecting his future. The government intends to make this respect a guiding principle in matters of agriculture.

Who qualifies for this assistance?

Any farm producer duly recognized by the Department and who believes he has the necessary potential on his farm may apply for admission to the program by contacting either his local or regional agricultural information office. He may also send his application directly to the Special Projects Division of the Quebec Department of Agriculture, 1020, Route de l'Eglise, Ste. Foy, Quebec.

Each application will be considered with a view to determining whether or not the proposed site is suitable for piscicultural purposes. The principal criteria used in the selection of the sites are the following: a water potential of approximately 5,000 gallons per hour, the possibility of setting up the planned installations within a perimeter of 1,000 feet of an inhabited area and the availability of water free of all chemical pollutants, organic or otherwise.

Markets and Profitability

Specialists concerned with setting up trout lakes on Quebec farms would like to point out to all interested farmers that the fish thereby produced can be used up through angling or through the retail or wholesale trade. They add that such operations, if properly set up and maintained, give good yields right from the first years. However, profits will vary depending on the scope of the piscicultural enterprise.

KEEP AN EYE ON YOUR ANIMALS

Each year, animal thefts account for considerable losses to Quebec farmers. With a view to making farmers more aware of this problem, the Department of Agriculture, in cooperation with the Quebec Provincial Police, has just published a brochure entitled "Vols d'animaux" (Animal Thefts). This brochure has been distributed to more than 40,000 producers and contains helpful information on how to assist Quebec Provincial Police in stamping out this crime.

Considerable losses for producers

Each year livestock thefts cause heavy financial losses and a consequent increase in the cost of livestock insurance. Faced with such an acute problem, the Crime Investigation Bureau of the Quebec Provincial Police prepared in

1974 a first plan of action to reduce this type of offence. In 1975, the Quebec Department of Agriculture agreed to participate in the prevention program. In the District of Quebec alone, the number of thefts were reduced from one to every 60 livestock owners in 1974, to one to every 100 in 1975 and to one to every 188 in 1976. On a province-wide basis, losses were reduced by almost 50 per cent in 1976. The Department of Agriculture and the Quebec Provincial Police are encouraged by such results and are hopeful that this publication will motivate farmers to keep an eye on their animals and to continue to cooperate with the police.

Help the police help you

At the start of fall, especially

during the hunting season, Quebec Provincial Police implement a stepped-up program of prevention. However, producers must ensure constant surveillance throughout the grazing period. In the brochure, farmers will find the principal security rules to be observed. Their application will help to make the security operation a success and reduce financial losses from violations. It should be noted that theft of animals valued at over \$200 may carry a penalty of up to 10 years imprisonment. For thefts of under \$200, the penalty may be up to two years imprisonment. In this brochure, producers will also find some tips from the Veterinary Services of the Quebec Department of Agriculture. You are, therefore, reminded to keep this guide and to apply the security measures it outlines.

(Continued from Page 24)

requirement with two gallons per tap better insurance for heavy flow periods.

Is added sap worth vacuum costs? Morrow (1969) estimates that vacuum produces an extra five gallons of sap per tap for one third of the trees on the line. On sloping lines (15 per cent or more) natural vacuum helps to increase sap yields but only at times of heavy flow periods. Pumped vacuum produces sufficient extra sap to more than pay for itself. (A Vermont publication reports 100 per cent increase over buckets using pumped vacuum.)

The above guidelines may help to encourage or discourage the incipient syrup producer depending on the availability of the necessary resources and the size of his pocketbook. However, these are only some of the basic parameters of a successful operation as the

major ingredients are enthusiasm for the task, an ability to undertake the hard physical, time-consuming work that accompanies any syrup operation, and a commitment to produce and market a satisfactory product.

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QWI Executive

The members of the Executive and Mrs. Wells Coates ask that we inform the members of the Quebec Women's Institutes of Mrs. Coates's resignation from the office of President. Mrs. Coates has also declined to accept the position of Past President. In her letter of resignation, which was accepted with regret at an Executive meeting held after the Annual Convention, Mrs. Coates thanked the Executive, the Board, and all members for their kindness and support at all times.

Miss Edna Smith has agreed to continue on with the duties of Past President to the best of her ability. At a special meeting of the Executive held at the home of Miss Smith on June 13 - 14, the decision was made to ask Mrs. J. L. Henderson of Black Cape

branch, Bonaventure County, to accept the position of 2nd Vice-President. (Mrs. Henderson stood for nomination in the election of officers one year ago.) It is with a great deal of pleasure that the Executive report that Mrs. Henderson has accepted this position.

The present slate of officers is as follows: Miss Edna Smith, Past President, Mrs. Walter Kilgour, President, Mrs. Sterling Parker, 1st Vice-President, Mrs. J. L. Henderson, 2nd Vice-President, and Mrs. G. E. Cascadden, who is carrying out the duties of Treasurer until the position has been filled.

Although there have been a few applications, the position, as mentioned above, of Treasurer is still open. The Executive would be pleased to hear from any member

who might be interested in and qualified for this position. A brief resume addressed to Mrs. Walter Kilgour, R.R. 4, Shawville, P.Q., J0X 2Y0 will be given careful consideration.

Please advise Mrs. Kilgour of any new members in your branch in order that she may welcome them.

Mrs. Kilgour and Mrs. Parker attended the Annual Board Meeting of the FWIC in Ottawa, June 21 - 23, as Senior and Junior Directors respectively. Mrs. Parker will be reporting on that meeting in an up-coming issue. We may look forward, as well, to hearing from Mrs. Kilgour, who, in assuming the responsibility and challenge of being President, asks for your guidance and support in the months to come.

Dear Lily,

Our annual spring Convention is over and what a successful one! I realize that it was impossible for you to attend, and more than once my thoughts travelled in your direction, so decided to write. You were such an active member in our small branch — we always asked "Lily" to help settle little problems that popped up at our meetings.

I arrived early Tuesday morning for the board meeting; the executive had met the day before. It was a pleasant drive along the lakeshore to Macdonald College and when the "tower" comes in sight, you know you are back at "Mac". There were a few minutes to wait, but whom did I meet but



From left to right: Mrs. Betty Gamble, Provincial Secretary, Mrs. Marion Fulton, Area Vice-President for Canada, ACWW, Mrs. Ruth Jamieson from the FWIC Office, Mrs. Estelle Coates, Mrs. Ina Kilgour, and Mrs. Gwen Parker.

Barbara Hendriks, Health and Welfare Convener from Abitibi! She and another delegate had come in during the night. Their bus had broken down somewhere in La Verendrye Park and it is a long drive down from Matagami. Soon everything was settled and we were ready for breakfast. You always notice a friend, so it isn't long until you are slipping in beside her at the table.

All our meetings were held in the Centennial Centre Lounge. It seemed as if there were not as many flowers as some springs; the dry weather has no doubt taken its toll, but the grounds were still delightful. The lounge is a spacious room, two sides are almost all windows, with beautiful white light-weight drapes. Through one side, one saw green trees with parts of the red College buildings peeping through. On the other, one viewed an uneven line of green trees; at times there was a pale green haze on the white curtains and again there was a pale blue misty look. No doubt the bright sun made the difference! Every time I looked out these two extended windows, I wished that I could stamp the view on my memory, sort of store it up for a stormy day next January.

The executive had had a busy day on Monday, so behind the table at the front of the room for the board meeting we find Mrs. Estelle Coates, President, Mrs. Betty Gamble, Secretary, Mrs. Ina Kilgour, First Vice-President and Mrs. Gwen Parker, Second Vice. I walked over to the building with Mrs. Keating, President of the Grosse Ile Branch from the Magdalen Islands. Mrs. Waugh, Education Convener from there attended also. Mrs. Keating said that she enjoyed convention days so much, the friendliness is what impressed her the most.

We all were pleased to hear that Miss Smith is improving. She had thought she might be able to come, but decided it might prove too much for her. Mrs. Cascadden was not present but is still doing the Treasurer's work.



Members enjoy tea at the home of Vice-Principal and Mrs. A. C. Blackwood. In the centre of the photo, standing, is Mrs. S. Murphy, School of Food Science, who judged the handicrafts.

After a short discussion, the idea of printing a QWI calendar was dropped, due to printing costs. There had been a good response to the Macdonald College Building Campaign. Or as one of the executive said, it is called Macdonald Agricultural Campaign, M.A.C.

A year's issues of the Macdonald Journals are being bound in one volume — from 1957-1976 have been done to date. Two volumes were passed around. You would enjoy looking over them, for the news would mean so much to you. Also, our executive have been searching for a cup and saucer, typical of our province for the F.W.I.C. office. It seems the other provinces have sent them. At last, they found one! It is a beautiful cup with a white lily in the pattern. Mrs. Gamble and Lucy French should get the credit. They found it in Duke's gift shop in Dorval.

We were invited to a tea at the home of Dr. A. C. Blackwood, Vice-Principal of the College. Mrs. Blackwood, assisted by wives of the faculty members, was a gracious hostess. This is a yearly event and looked forward to by the ladies. It was my first visit,

and the walk along the lakeshore in the ideal weather, the beautiful art work in the home, and the friendly atmosphere combined to make it a very pleasant interlude.

One thing I noted about the board meetings — one really gets to know the members. Discussion is lively and everyone takes part. To tell the truth, I really felt at home at this one.

As the ladies gathered for the 9:30 meeting on Wednesday morning, Hilda Graham was at the piano favouring us with lively music. When the ladies were seated the room looked like a big bouquet of spring flowers. Aren't the colours for women's and children's clothes so pretty this year?

Dr. Blackwood gave the address of welcome. He said that we would be in our new building next year. I suppose you know that 63 WI conventions have been held here at Macdonald College. The theme for this year is Communication, Coordination, Cooperation and Confidence — the 4c's. It is a good theme. I wondered to myself if they were listed in order of importance. I think communication



Citizenship Convener, Mrs. Lucy French, enjoyed the pleasant task of collecting Pennies for Friendship.

is so very important. Dr. Blackwood said it is what makes the WI what it is. It seems to me communication means so much in many aspects of life, in school, at work, and, most important, in family life.

Mrs. Fulton, Area Vice President for Canada, A.C.W.W., was our guest speaker. She said she was disappointed that there were no plays. They did involve considerable work but so much enjoyment was derived from them. You will remember how we practiced



Refreshments served by the West Island branch offered a welcome break for Convention delegates.



Miss Viola Moranville assisted Home Economics Convener Mrs. Rubin Knights with the wonderful display of handicrafts. The panel in the background was made in memory of the late Mrs. Edyth Westover.

in the homes and then in the community hall? Mrs. Fulton said that we all are members of the A.C.W.W. and that the next A.C.W.W. might be held in Canada. They would try for that but, of course, they would have to overcome a few problems. English ladies are very dedicated to Institute work and the head office is in London, England. Mrs. Fulton told us that a woman in Zambia does not prepare for the birth of a baby — in case he or she dies. The Institutes in England made 3,000 jackets for these babies.

Another interesting fact is that you can buy a membership in A.C.W.W. and she advised anyone who wanted to be a life member to apply for it **now**. Also the support of Pennies for Friendship and Nutrition Education Fund was commended — they do so much for under-privileged countries, especially rural women and children. Mrs. Parker presented Mrs. Fulton with a gift, but she said the best gift was being asked to talk about A.C.W.W. and to meet WI women. As I was leaving the lounge in the Centennial Centre for home on Thursday, Mrs. Fulton spoke to me and said she would contribute an article for the Journal in the near future. At the meeting that day we had been discussing publicity and how

we wanted to receive some good specials for our WI pages. So we will look forward to Mrs. Fulton's article.

Then it was lunch again — the meals all were good and plentiful. Even so, we all seemed to gather in the Stewart room in the evening for the delightful lunch served by the West Island members. On the way back for the afternoon session I overheard one lady say to another "there are a lot of changes since I attended college here, but those big doors at the



Mrs. Anne Robertson with part of the magnificent "Kenyan display" which she set up in the handicrafts room.



Caught counting the cash! Mrs. Norma Roxburgh and Mrs. Phyllis Pitchford, West Island branch, obviously delighted with the "rewards" for their members' hard work.

enjoyable and the group received a standing ovation from the many ladies present.

These were some highlights of the Wednesday meeting. Mrs. Cameron Dow from Bonaventure County and Mrs. Muriel Bronson from Pontiac County were present and both are over 90.

I spoke with Mrs. Bronson as the ladies were assembling for the evening's entertainment. She said she would be 91 this summer, and had missed only two conventions since she joined. She is a life

dining hall are the same, and the tunnel doesn't change much." Our speaker for the afternoon was Mr. R. Dallenbach, Director of the Macdonald College Farm. His address was very inspiring, witty, and direct. Some of his remarks stayed with me. He said "I don't believe in training people — you develop them. Canada has not done enough in the field of human resources. The WI creates many opportunities for people to participate." He also said that we are a sophisticated group, that we have been in the business a long time. The ladies really enjoyed Mr. Dallenbach's remarks. Maybe they gave a boost to our ego. Then in the evening, the Lachine High School choir and band put on the entertainment. This was most



On their way in to the Centennial Centre: Mrs. Betty Gamble, Mrs. Beth Cullen, Sherbrooke County President, and Mrs. Margaret Eastman, Richmond County President.

member, and her daughter, who was with her at the Convention, is helping to get her a life membership in the A.C.W.W. Mrs. Bronson said she had enjoyed the day's program so much, and was looking forward to her A.C.W.W. membership. She said she never thought that would happen to her. Then Mrs. Edith Watt, Marcil branch, was proud to have her mother, Mrs. Cameron Dow attend the Wednesday afternoon session. Mrs. Dow has had a distinguished career in WI work. The youngest member was Barbara Hendricks from Matagami. I happened to sit beside Barbara at breakfast, and she was telling us that there were very few older people up North, that when a grandparent came to visit, it was quite exciting for the younger children. When her mother came, they came to see what a grandmother really looked like. Then, of the ladies present, the earliest graduate from the College was Mrs. Alice Muir, Inverness Branch. Her comments were "Haven't been here for quite awhile, but I find this convention more interesting than most that I have attended. All members truly seem to be living up to their creed."

A very important part of the Convention is the handicraft section. The judge, Mrs. Liz Murphy, said the standard of work was very good. The representative from J. & P. Coats said the company planned to increase the prize money and that there would be crocheted work in the competitions. He also said that our province seemed to have the most successful exhibition — they hold them in other provinces also. Miss Moranville said that she was pleased to be asked back and proud of the display. I asked Olive Wallace, a past provincial convener for a comment, and she said "there were many more entries in both the QWI and the J. & P. Coats Competitions and the work was of a much higher standard with excellent displays. It was most gratifying!"



Ready for another meeting are left to right, Mrs. William Rayson, Rouville County President, Mrs. Merlin Lewis, Missisquoi County President and Mrs. Walter Kilgour, then First Vice-President and now President of QWI.

Mrs. Stella Parkes, Richmond County, had been at the registration desk. This was a first for her so it was a busy time, but she appreciated her willing helpers, especially Hazel Clarke.

This successful convention was drawing to a close, and I felt that some of the ladies who knew more about the work than I did should be contacted. Miss Norma Holmes, Past Provincial Secretary, gave me this message. "You missed a real 'rejuvenation of spirit'. Not only is it a lovely place to spend a few days, but you meet old friends and make new ones, even meeting in the dining room and corridors is fun. But of course the main reason for a convention is business, and you not only review your last year's accomplishments (which are really astonishing) but you learn and take home new ideas to give you inspiration for the next year." From Mrs. Patrick Jones, who also has held a provincial office, I had this note. "For me, coming to QWI Convention is like coming home after a long journey. I enjoy meeting old friends and making new ones. This year the theme

is the 4 C's, meaning what we have to do for the success of the future of our organization." One couldn't find a better ending.

I have overlooked many interesting items but this letter may give you an idea of the 'spirit' of the three days spent at our annual Convention.

Love,
Gladys.

Lily is Mrs. George Rothney who is a resident in the Wales Home, Richmond, Quebec. Lily was an active member of Kinnears Mills branch and had been a member of the Lemesurier branch. George and Lily were very close friends of the late Mrs. V. R. Beattie, Past Provincial President of Quebec WI and of the late Mr. Beattie.

Gladys C. Nugent,
QWI Publicity Convener.

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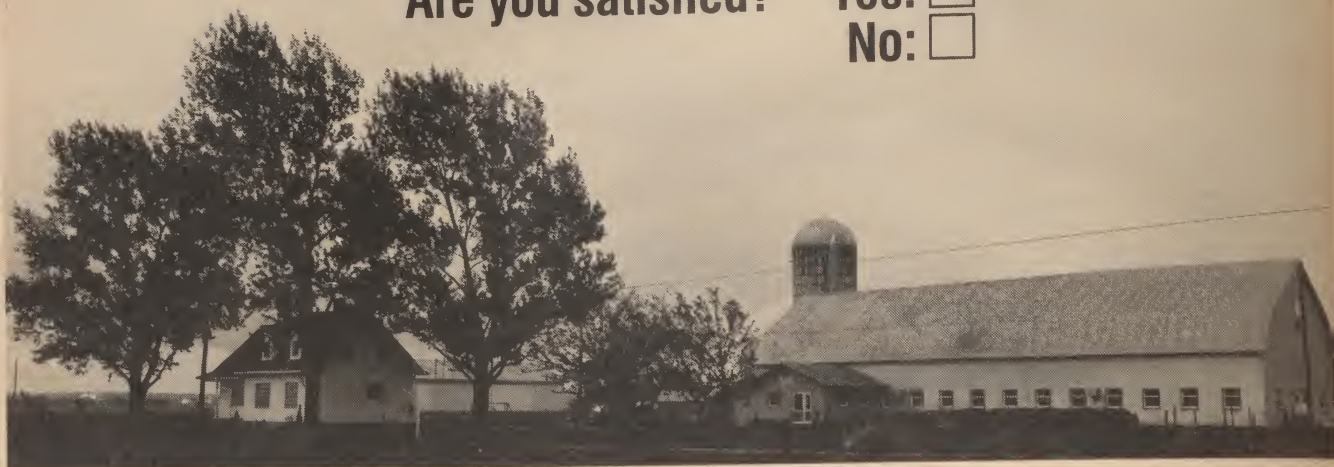
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